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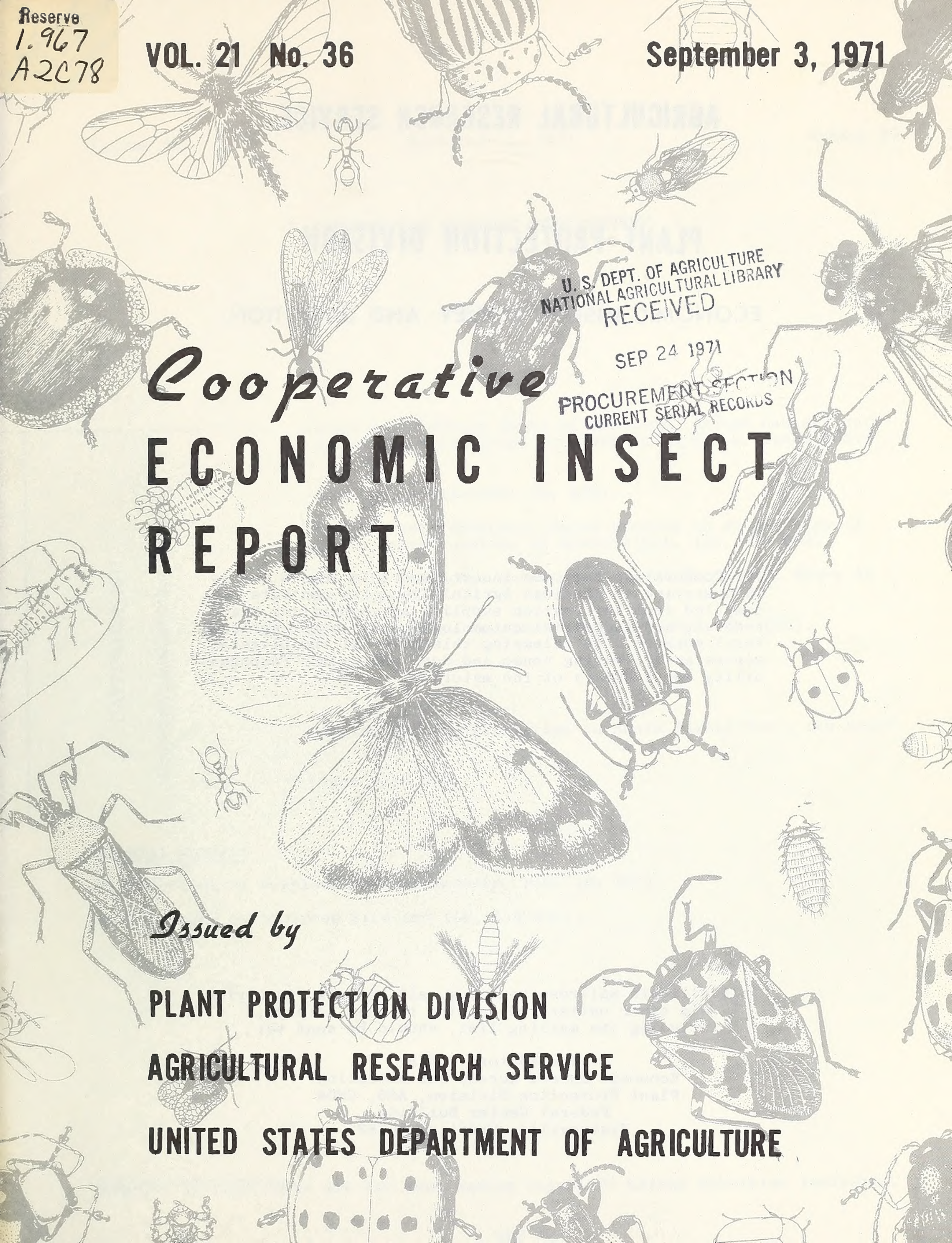

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PLANT PROTECTION DIVISION
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PROTECTION DIVISION

ECONOMIC INSECT SURVEY AND DETECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Volume 21 September 3, 1971 Number 36

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

Current Conditions

CORN EARWORM moths increased on Eastern Shore of Maryland. Larvae damaged corn in Kentucky. Building up in South Carolina; economic on soybeans. Moths heavy in Arkansas. (p. 629).

FALL ARMYWORM damaged sorghum in Oklahoma. (p. 630).

BOLLWORMS heavy on cotton in west Tennessee. Major problem in Avra Valley of Arizona. Moths increased in delta counties of Mississippi. (pp. 631-632).

BOLL WEEVIL damaged cotton in Oklahoma. Increased in west Tennessee. Heavy in south and central Alabama. (p. 632).

CABBAGE LOOPER outbreak on cotton in Cochise County, Arizona. (p. 632).

Detection

TOBACCO FLEA BEETLE reported for the first time in South Dakota for a new State record. (p. 632).

For new county records see page 633.

Special Reports

Distribution of Purplebacked Cabbageworm. Map. (p. 638).

Bibliography on Imported Fire Ant (pp. 639-652).

Reports in this issue are for week ending August 27 unless otherwise indicated.

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WEATHER OF THE WEEK ENDING AUGUST 30

Reprinted from Weekly Weather and Crop Bulletin supplied by Environmental Data Service, NOAA.

HIGHLIGHTS: Temperatures averaged near normal over most of the Nation. Tropical Storm Doria, drenched the Atlantic coast late in the week.

PRECIPITATION: Lines of thunderstorms marched across the Great Lake region to New England early in the week. In the Chicago, Illinois, area some of the thunderstorms were accompanied by strong winds, hail, and heavy showers. A tornado near Naperville about 30 miles west of Chicago destroyed 2 residences. Winds at Lake Forest, northwest of Chicago gusted to 60 m.p.h. and hail up to 0.75 inch in diameter accompanied strong winds. Other thunderstorms dotted the southwest central Rocky Mountains and Gulf States. Over 2 inches of rain fell in spots north of Abiliene, Texas, and some localities near the Gulf of Mexico from Texas to Florida, received over 1 inch of rain late Tuesday and early Wednesday. Tropical Storm Doria, moved northward along the Atlantic coast late in the week, soaking most areas with 4 to more than 6 inches of rain. Trenton, New Jersey, received 6.05 inches Friday. The weekly total at Trenton was 8.09 inches. Winds associated with Tropical Storm Doria were generally about 60 m.p.h., but gusts occasionally approached hurricane speed. Philadelphia, Pennsylvania, recorded 74 m.p.h. gusts and Bridgeport, Connecticut, 75 m.p.h. gusts. Doria lost much of her energy as she moved across New England Saturday. Flooding and wind damage were widespread but pleasant weather returned to most of Northeast by Sunday. A new tropical depression moved westward across the Florida Peninsula Sunday night. This depression is about 100 miles west of Tampa.

Weather of the week continued on page 636.

SPECIAL INSECTS OF REGIONAL SIGNIFICANCE

ARMYWORM (Pseudaletia unipuncta) - NORTH DAKOTA - Larvae averaged 1 per square foot in storm damaged oatfield near Des Lacas in Ward County. About 90 percent of leaves stripped in regrowth oats in late milk stage. (Brandvik).

CORN EARWORM (Heliothis zea) - OKLAHOMA - Ranged 3-4 per head of sorghum in Caddo County. Moderate to heavy in late sorghum in Cotton, Tillman, and Okmulgee Counties. (Okla. Coop. Sur.). NEBRASKA - Ranged 0-12 (averaged 4) per 25 ears in 8 cornfields in Hamilton, Merrick, Nance, and Howard Counties. (Berogan). MICHIGAN - Limited adult collections on August 21, 22 at Lenawee blacklight station. Growers can expect larval problems soon, especially when fresh silk exposed. Expect increase until killing frost. Late crops should be watched. (Laughlin). DELAWARE - Adults 32 per night in blacklight traps in Sussex County, and larvae averaged 2 per ear in untreated sweet corn. (Burbutis, Lesiewicz). MARYLAND - Moths increasing in light traps on Eastern Shore. Ear infestation ranged 14-26 percent in processing corn in Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Subeconomic in most sorghum in Dinwiddie, Sussex, Greenville, Isle of Wight, and Nansemond Counties. Larvae very light in Greenville, Sussex, Southampton, Isle of Wight, and Nansemond Counties peanuts. Larvae subeconomic on soybeans in Nansemond, Sussex, Southampton, Isle of Wight, and Prince George Counties. (Allen). KENTUCKY - Larvae damaged corn in Logan County. Feeding in whorls and ears. Larvae averaged 4.5 per 10 plants. (Barnett). SOUTH CAROLINA - Building up in most counties, especially those in middle and southern areas. Economic populations on soybeans reached in many areas. Heavy on unprotected sweet corn statewide. (Thomas). TENNESSEE - Surveys in west area soybeans negative; pod development in most fields almost to stage where beans become very attractive to egg laying and to stage where pods will support damaging population. Counts continue heavy in blacklight traps in west areas and increase expected for next generation. (Gordon). ARKANSAS - Gradually increasing in soybeans. Currently moth flights heavy; expect larval increase in soybeans. With good moisture in most areas, cotton will not "cutout" as rapidly. This should keep moths divided between 2 crops. In Lonoke and Prairie Counties, larvae 10 per 30 row feet. In Desha County, heaviest count 62 per 30 row feet. Infestations in only a small percentage of fields. (Boyer).

CORN LEAF APHID (Rhopalosiphum maidis) - OKLAHOMA - Still heavy on late sorghum in Cotton and Tillman Counties. (Okla. Coop. Sur.). MAINE - Generally light. Adult and larvae of several species of lady beetles present and up to 1 larva per 5 plants. Last week populations of R. maidis very heavy in one field. Same field this period showed sharp decrease in populations with 25 percent of those on plants parasitized and many infested by fungus. (Gall).

HORNWORMS (Manduca spp.) - TENNESSEE - Larvae 3 per 10 stalks, indicates some damage expected even though larvae small (second or third instar) and harvesting of tobacco noted in Franklin County. (Cagle). OHIO - M. sexta (tobacco hornworm) in Adams County, averaged 0.15 per tobacco plant. Individual field averages as high as 0.45 per plant. Up to 45 percent of plants sampled showed damage. Ten to 25 percent of individual leaves eaten. (Andress). ARIZONA - M. sexta larvae damaging chili peppers in few fields at McNeal, Cochise County. (Ariz. Coop. Sur.).

GREENBUG (Schizaphis graminum) - TEXAS - Light in Trans-Pecos area, less than 50 per plant in most fields. Populations in High Plains reduced by beneficial insects. Damaging infestations not reported in Amarillo area, Potter County. (Neeb, Clymer). ARKANSAS - Specimens collected in Randolph County, August 16. This is a new county record. Moderate, 0-500 per plant in Washington County. (Boyer).

POTATO LEAFHOPPER (Empoasca fabae) - MISSOURI - Light to moderate, 18-120 per 10 sweeps of alfalfa in southwest area. (Munson). MARYLAND - Averaged 50 per sweep in 15 acres of alfalfa in Queen Annes County. (U. Md., Ent. Dept.).

CORN, SORGHUM, SUGARCANE

EUROPEAN CORN BORER (*Ostrinia nubilalis*) - NEBRASKA - First to fourth instar larvae averaged 11.1 per corn plant in 8 fields in Hamilton, Merrick, Nance, and Howard Counties. Egg masses averaged less than 1 per 5 plants. (Berogan). WISCONSIN - Moth catches heavy until night of August 22, and cool weather reduced activity. Egg counts below 10 per 100 plants in most sweet corn. Second-generation larvae light in southwestern sweet corn. (Wis. Ins. Sur.). INDIANA - Counts of first-generation larvae indicate infestations 1.5 times as great in 1971 as in 1970, statewide. (Huber). MICHIGAN - Blacklight collections 100+ at Lenawee, Monroe, Montcalm, and Ottawa County stations. Egg laying and larval activity continues. Controls necessary on susceptible crops until frost. (Laughlin). OHIO - Second-generation larvae in bases of midribs of field corn in southern areas. (Andress). DELAWARE - Adults 128 per night in blacklight trap at Bridgeville, Sussex County. Infestations in untreated sweet peppers averaged 22 percent with 5 fresh egg masses per 10 plants on August 26 at Bridgeville. (Burbutis, Lesiewicz). MARYLAND - Larval infestations ranged 20-84 percent in corn in late silk stage in Queen Annes County. (U. Md., Ent. Dept.). VIRGINIA - Numerous moths emerged in Nansemond County area during past few weeks. Watch sorghum crop. (Roberts, Allen). MISSISSIPPI - Third-generation egg laying underway in Marshall County. Populations in corn moderate to heavy. (Davis).

FALL ARMYWORM (*Spodoptera frugiperda*) - TEXAS - Moderate to heavy in Trans-Pecos area; larvae 1-2 per sorghum plant whorl. This species and *Heliothis zea* (corn earworm) still present in High Plains area. Most infestations ranged light to medium. (Neeb, Clymer). OKLAHOMA - Reported damaging sorghum heads in Jackson, Kiowa, and Washita Counties. Moderate to heavy in late sorghum in Okmulgee County and continues heavy in late corn in Tillman County. (Okla. Coop. Sur.). TENNESSEE - Damaging late corn and milo in Coffee County. (Williams). MARYLAND - Increased. Watch late-planted field corn statewide. (U. Md., Ent. Dept.).

WESTERN BEAN CUTWORM (*Loxagrotis albicosta*) - SOUTH DAKOTA - Larvae collected for first time near Oral, Fall River County, August 12, 1971. Determined by G.P. Sutter. Second and third instar larvae taken in association with corn cobs in ditch-irrigated corn. In 200-acre field on August 18, 5-8 percent of plants surveyed showed 1-3 second to fourth instar larvae. Previous to these collections only moths recovered in State. (Jones).

SORGHUM WEBWORM (*Celama sorghiella*) - TENNESSEE - Counts of 4-5 per head in sorghum in Tipton County. Sorghum in dough stage and some damage expected. (H.D. Gordon).

WESTERN CORN ROOTWORM (*Diabrotica virgifera*) - COLORADO - Adults light to moderate in Montrose, Delta, Mesa, and Garfield Counties. Heavy in fields and some controls applied. (Bulla). UTAH - Damage severe to 30 acres of corn in Box Elder County (Knowlton, Lindsey); also damaged corn in portions of Cache County. (Knowlton, Burningham).

NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) - TENNESSEE - Abundant on corn in Coffee County for a new county record. No damage reported. Continues to damage corn in Morgan County. (Williams).

SORGHUM MIDGE (*Contarinia sorghicola*) - OKLAHOMA - Very heavy in late sorghum in Wagoner County field. Destroyed 99 percent of grain in some heads. (Okla. Coop. Sur.).

SPIDER MITES - UTAH - Unspecified species discoloring corn foliage in Weber County (Boyer); treated 4,532 acres of corn in Utah County as of August 20 (Horne); much control applied in Sevier County. (Roberts).

TURF, PASTURES, RANGELAND

CHINCH BUG (*Blissus leucopterus leucopterus*) - SOUTH CAROLINA - Heavy and some lawn damage in Clemson area, Pickens County. (Miller). MAINE - Reports of lawn injury continue; invading homes in southern and central areas. (Gall).

TWOLINED SPITTLEBUG (*Prosapia bicincta*) - SOUTH CAROLINA - Unusually heavy, 287 spittle masses per square yard on lawns in 6 city-block-area of Myrtle Beach, Horry County. (McKee).

FALL ARMYWORM (*Spodoptera frugiperda*) - ALABAMA - Larvae damaged Coastal Bermuda grass in Geneva County field. (Reynolds).

A NOCTUID MOTH (*Agrotis ducens*) - NEW HAMPSHIRE - Moths 30 in blacklight trap at Newington, Rockingham County. (Schaefer).

FORAGE LEGUMES

WESTERN YELLOWSTRIPED ARMYWORM (*Spodoptera praefica*) - NEVADA - All larval instars averaged 1 per sweep of alfalfa in Stillwater area, Churchill County. (Hilbig).

PEA APHID (*Acyrthosiphon pisum*) - UTAH - Required controls in some Wayne County alfalfa fields, moderate in Piute County. (Chapman).

ALFALFA WEEVIL (*Hypera postica*) - UTAH - Adults numerous; some larval damage in Wayne and Piute Counties. (Chapman).

A LYGUS BUG (*Lygus hesperus*) - NEVADA - Adults ranged 35-60 per sweep in 450 acres of alfalfa in Humboldt County. (Stitt).

ALFALFA SEED CHALCID (*Bruchophagus roddi*) - TEXAS - Moderate to heavy in alfalfa seed fields in Ward and Pecos Counties. (Neeb).

LEAFMINER FLIES - VERMONT - Unspecified species prevalent in alfalfa. Spread and increase in numbers occurred in last few years. Despite apparent off color and injury, insect does not affect yield or quality. (Nielsen).

SOYBEANS

VELETBEAN CATERPILLAR (*Anticaria gemmatalis*) - SOUTH CAROLINA - Larvae 3 per square yard, caused 5 percent foliar loss to 6 acres of soybeans in Marion County. Similar damage noted in other fields where specimens could not be found. (Pate).

PEANUTS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - TEXAS - Light in counties near Stephenville. Populations which exceed economic thresholds found in irrigated fields near De Leon and in dryland field near Gorman. Infestations needing insecticidal treatment also reported in Hill County. Medium in Motley County. (Hoelscher, Pallmeyer).

FALL ARMYWORM (*Spodoptera frugiperda*) - OKLAHOMA - Averaged 3 per linear foot of peanuts in Love County. Some fields sprayed. (Okla. Coop. Sur.).

COTTON

BOLLWORMS (*Heliothis* spp.) - ARIZONA - *H. zea* major problem in Avra Valley, Pima County. (Ariz. Coop. Sur.). OKLAHOMA - Damage averaged 5 percent in treated cotton and 30 percent in untreated cotton in Grady County. Damage ranged 5-15 percent in fields in Marshall, Stephens, Jefferson, and Tillman Counties. Moderate in Washita and Bryan Counties. (Okla. Coop. Sur.). LOUISIANA - In Madison Parish, infestations ranged 1-3 (averaged 1.3) percent in 75 of 122 plots, larvae found in 25 plots. Damaged bolls in 75 of 119 plots. Moth flights increased; expect problems in September. In light trap, collected 363 *H. zea* and 6 *H. virescens*. (Cleveland et al.). MISSISSIPPI - In delta counties, *H. zea* moth collections increased in light traps. Heavier than in corresponding week past 2 years. Eggs still abundant in attractive fields. Damaged squares averaged 1.45 (maximum 9) percent in 16 of 21 fields. (Pfrimmer et al.). TENNESSEE - Continues very serious threat throughout cotton-growing area. Infestations very heavy. All stages of larvae found in late cotton. As high as 75 larvae or eggs per 100 terminals in one field in Hardeman County. Control in order in most late cotton. Appears to be worst year for larval damage since survey started in 1950. (Locke). ALABAMA - Moth flights continue heavy in south and central areas and increased in north areas. Egg laying heavy, 5-100 per 100 stalks in many south and central fields. (McQueen). SOUTH CAROLINA - In Florence County, remains lighter than 1970. Collected 644 *H. zea* and 2 *H. virescens* in light trap this period. (Taft et al.).

BOLL WEEVIL (*Anthonomus grandis*) - OKLAHOMA - Very heavy near overwintering areas in Washita, Caddo, Kiowa, and Greer Counties. Some fields treated 6 times and still show heavy damage, as much as 100 percent. Ranged 2-50 percent in Tillman County with higher counts in untreated fields. Ranged 10-15 percent in Stephens and Jefferson Counties, 10-25 percent in Marshall County, and 5-10 percent in Love County. Heavy in Bryan County and moderate in Garvin and Cleveland Counties. (Okla. Coop. Sur.). LOUISIANA - In Madison Parish, no weevils recovered from sticky traps. Punctured squares ranged 2-60 (averaged 23) percent in 122 plots. (Cleveland et al.). MISSISSIPPI - Still threat to cotton throughout State. In delta counties, infestations spotty; control underway in most areas. (Robinson). In delta counties, punctured squares averaged 12.4 (maximum 65) percent in 16 of 21 fields. Third-generation weevils emerging. No weevils recovered in pheromone-baited wing traps. (Pfrimmer et al.). TENNESSEE - Continues to increase in west areas with another "hatchout" occurring. Damaging infestations present throughout cotton-growing area. Infestations of 60-80 percent punctured squares in some of northern counties common. Small boll damage in late cotton considered heavy. Control difficult due to rank cotton and heavy migration. Eight weevils observed in one bloom in Hardeman County. (Locke). ALABAMA - Adults heavy throughout south and central areas and Tennessee River Valley area. Controls general and effective. "Hatchouts" continuous and overlapping. Weather conditions continue favorable for weevil development. (McQueen). SOUTH CAROLINA - In Florence County, infestations increasing; migrations decreasing. (Taft et al.).

CABBAGE LOOPER (*Trichoplusia ni*) - ARIZONA - Outbreaks requiring controls at McNeal and San Simon, Cochise County. (Ariz. Coop. Sur.).

BEET ARMYWORM (*Spodoptera exigua*) - ARIZONA - Problem in some fields at San Simon, Cochise County. (Ariz. Coop. Sur.).

COTTON LEAFWORM (*Alabama argillacea*) - OKLAHOMA - Light to moderate in cotton in Okmulgee County. First report of year. (Okla. Coop. Sur.).

WHITEFLIES - TENNESSEE - Undetermined species heavier than usual. Some damage observed in one field in Fayette County. First year observed heavy enough to cause damage in this area. (Locke).

SUGAR BEETS

GARDEN SYMPHYLAN (*Scutigerella immaculata*) - UTAH - Reinfested and damaged sugar beets in 32-acre field in Farr West area of Weber County. (Dorst).

POTATOES, TOMATOES, PEPPERS

TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) - SOUTH DAKOTA - Specimens collected at Forestburg, Sanborn County, by H.C. Severin on June 23, 1944. Determined by E.U. Balsbaugh. This is a new State record. New county records include: Caly (1946), Gregory (1950), Roberts (1952), Brookings (1958), and Yankton (1959). (Jones).

VARIEGATED CUTWORM (*Peridroma saucia*) - OHIO - Larvae ranged 10-15 per tomato plant; damaged fruit on 30-acre field in Sandusky County. (Sleesman).

A WHITEFLY (*Aleyrodes spiraeoides*) - CALIFORNIA - Counts of 8 per leaf of bell pepper plants in 60-acre field at Selma, Fresno County. (Cal. Coop. Rpt.).

BEANS AND PEAS

LESSER CORNSTALK BORER (*Elasmopalpus lignosellus*) - FLORIDA - Damage economic to 25-30 percent of commercial acreage of southern peas near De Funiak Springs, Walton County (Thomaston). No controls expected due to lack of effectiveness at this late date. (Brogdon).

COLE CROPS

CABBAGE LOOPER (*Trichoplusia ni*) - MICHIGAN - Additional blacklight collections at most stations indicate chemical controls from now to end of season vital for marketable crop. (Laughlin).

GENERAL VEGETABLES

ASPARAGUS APHID (*Brachycolus asparagi*) - NEW JERSEY - Stunted asparagus brush noted near Clarksboro, Gloucester County, injury heavier near edge of field near woods. Heavy near Hurffville. (Ins.-Dis. Newsltr.).

DETECTION

New State Record - TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) SOUTH DAKOTA - *Sanborn County.* (p. 632).

New County Records - GREENBUG (*Schizaphis graminum*) ARKANSAS - Randolph (p. 629). GYPSY MOTH (*Porthetria dispar*) PENNSYLVANIA - Franklin (p. 635). JAPANESE BEETLE (*Popillia japonica*) TENNESSEE - Weakley (p. 635). NORTHERN CORN ROOTWORM (*Diabrotica longicornis*) TENNESSEE - Coffee (p. 630). TOBACCO FLEA BEETLE (*Epitrix hirtipennis*) SOUTH DAKOTA - Caly, Gregory, Roberts, Brookings, Yankton (p. 632).

CORRECTIONS

CEIR 21(28):497 - GRASS BUGS - WASHINGTON ... delete note. (PPD).

CEIR 21(30):529 - APPLE MAGGOT (Rhagoletis pomonella) - MINNESOTA - "Adults reported in two locations in Lake Minnetonka area and at New Ulm." should read " ... Lake Minnetonka area and at *Sleepy Eye*." No flies reported at New Ulm as of July 22. (Minn. Ins. Rpt.).

CEIR 21(35):616 - SOUTHWESTERN CORN BORER (Diatraea grandiosella) - MARYLAND - ... should read SOUTHWESTERN CORN BORER (Diatraea grandiosella) - *ALABAMA*.(PPD).

DECIDUOUS FRUITS AND NUTS

WALNUT HUSK FLY (Rhagoletis completa) - OREGON - Now established in western Washington County. To·date total of 39 adults recovered in Frick traps located in Scholls and Hazeldale areas. First adults trapped at these sites on August 9. (Anderson, Penrose).

FOREST AND SHADE TREES

ELM LEAF BEETLE (Pyrrhalta luteola) - NEBRASKA - One of heaviest second generations statewide on record. (Keith).

VARIABLE OAK LEAF CATERPILLAR (Heterocampa manteo) - NORTH DAKOTA - Defoliation heavy in Fort Totten area of Benson County. Several areas of basswood, oak, and elm trees 100 percent defoliated. Larvae ranged 0.5-1.5 inches long with most larvae nearly full grown. In Killdeer Mountain area in Dunn County, defoliation not as severe. Birch and buroak defoliated in this area. Paper birch trees severely defoliated in 1970 did not leaf out completely in 1971. (Brandvik).

LOCUST LEAF MINER (Xenochalepus dorsalis) - KENTUCKY - Infestation as high as 90 percent in Barren, Hardin, Nelson and Warren Counties locust. (Barnett).

MAN AND ANIMALS

HORN FLY (Haematobia irritans) - OHIO - Averaged 194 on backs of beef cattle in Noble County. (Pratt). NEBRASKA - Averaged 500 per head on untreated range cattle pastured near North Platte in Lincoln County. (Campbell). COLORADO - Increasing on range cattle in eastern areas; up to 800 per animal noted. (Hantsbarger). OKLAHOMA - Ranged 300-350 per head on cattle in Payne County and 300-500 in Marshall County. Heavy in Garvin and Garfield Counties and moderate in Craig and Cleveland Counties. (Okla. Coop. Sur.). TEXAS - Heavy on cattle in Trans-Pecos area. Heavy on cattle in Throckmorton, Stephens and Wilbarger Counties. (Neeb, Boring).

STABLE FLY (Stomoxys calcitrans) - WISCONSIN - Moderate in most counties. Severe annoyance to cattle reported in Sauk and Calumet Counties. (Wis. Ins. Sur.). NEBRASKA - Averaged 20 per leg on untreated feed lot animals near North Platte, Lincoln County. (Campbell).

MOSQUITOES - MINNESOTA - Light trap catch of females for week ending August 20 totaled 6,660, little more than 50 percent number taken week before. Aedes vexans accounted for 85 percent of catch. A. vexans dominant in larval and bite collections. Heavy rains which occurred August 18 in northern half of district resulted in high population densities of larvae, especially in run-off areas such as roadside ditches. Some increase in mosquito numbers in district may occur, especially if winds from north. (Minn. Pest Rpt.).

FACE FLY (Musca autumnalis) OHIO - Adults averaged 23.2 per head observed on beef cattle in Noble County. (Pratt). WISCONSIN - Very heavy numbers annoying cattle in portions of Sauk, Bayfield, Iron, Adams, and Chippewa Counties. Reports indicate numbers low in other counties. (Wis. Ins. Sur.). NORTH DAKOTA - Flies 20 per face noted on range cattle in Dunn County. Economic infestations not widespread this season. (Brandvik). NEBRASKA - Ranged 15-20 per head on range cattle near North Platte, Lincoln County. Treatment has had little effect in most cases. (Campbell).

BROWN RECLUSE SPIDER (Loxosceles reclusa) - ALABAMA - Total of 43 collected from home at Ragland in St. Clair County. (Weaver).

FEDERAL AND STATE PLANT PROTECTION PROGRAMS

GRASSHOPPERS - MINNESOTA - Adults light in the northwest district. Highest count 10 per square yard. In south-central district, one small alfalfa field near woods had estimated 90 per square yard. One area in Freeborn County, 45-55 per square yard in field margin. In west-central district, populations generally low. In east-central and central districts economic, ranged 12-25 per square yard. Economic in Anoka, Sherburne, Stearns, Todd, and Kanidyohi Counties. (Minn. Pest Rpt.). COLORADO - About 900,000 acres of private, State, and Forest Service rangeland infested in southeastern areas. (Watson). NEVADA - Adults of *Melanoplus sanguinipes* and *M. bivittatus* range 5-8 per square yard in alfalfa near Battle Mountain, Lander County. (Martinelli, Rowe). NORTH DAKOTA - Adult survey completed with scattered infestations (2 rating) in parts of McLean, Sheridan, Ward, McHenry, Pierce, Bottineau, Benson, Pembina, Grand Forks, and Walsh Counties. Infestations mainly in alfalfa and weedy roadsides. *Melanoplus bivittatus*, *M. sanguinipes* and *M. femurrubrum* dominant. (Brandvik, Grasser).

GYPSY MOTH (*Porthetria dispar*) - PENNSYLVANIA - Single male moths trapped in Blair, Crawford, Elk, Cameron, Clinton, and Warren Counties for the first time. Four moths trapped in Franklin County for a new county record. VIRGINIA - Single male moths trapped in Roanoke and Mecklenberg Counties. (PPD).

JAPANESE BEETLE (*Popillia japonica*) - OHIO - Adult beetles reported from Auglaize County. (Ohio Dept. of Agr.). INDIANA - Adults taken in pheromone traps in Steuben, Parke, and Sullivan Counties. (Favinger). TENNESSEE - Trapped 10 adults at Greenfield, Weakley County. Earlier one adult trapped, but not considered an infestation. Undetermined area of Greenfield now considered infested. This is a new county record. One adult trapped at I-40 rest stop in Dickson County. No infestation known to occur in county. (Gordon).

MORMON CRICKET (*Anabrus simplex*) - MONTANA - Counts of 1 per square yard near Hobson, Judith Basin County, and Forsyth, Rosebud County. (Pratt).

PINK BOLLWORM (*Pectinophora gossypiella*) - ARIZONA - Several hundred acres treated at Safford, Graham County. No buildup pattern observed at Avra Valley, Pima County, as in previous years. Larvae found at Bowie, Cochise County. (Ariz. Coop. Sur.). CALIFORNIA - Boll infestations 50-55 percent in Imperial Valley, Imperial County; 36.8 percent in Coachella Valley, Riverside County; 6.3 percent in Palo Verde Valley under planned insecticide program; 2.0 percent in Needles, San Bernardino County. (Cal. Coop. Rpt.)

SWEETPOTATO WEEVIL (*Cylas formicarius elegantulus*) - FLORIDA - Few and scattered (estimated 5 percent infestation) on 840 50-pound bags of Cuban sweetpotatoes (boniata) at Perrine, Dade County August 9. (Knowles). Control requested. (Fla. Coop. Sur.).

HAWAII INSECT REPORT

Turf and Pasture - GRASS WEBWORM (Herpetogramma licarsisalis) adults trace, 1-4 per 10 sweeps, in mixed stand of grass at Kaneohe and Mililani, Oahu. Light trap collections increased as follows: May, 35; June, 62; July, 81. On Maui, adults moderate in 10 acres of Kikuyu grass pasture at Ulupalakua; larvae nil. All stages nil in pastures at Haiku and Waihee. (Au et al.).

Fruits and Nuts - Moderate to heavy damage by larvae of a Noctuid Moth, Phlegetonia delatrix to about 50 percent of leaves on 50+ Java plum (Eugenia cuminii) at Haiku and Wailuku, Maui. At Manoa, Oahu, young leaves on several backyard mountain apple (E. malaccensis) trees heavily damaged. (Ah Sam, Kashiwai).

Ornamentals - Heavy damage by a NARROW WINGED KATYDID (Elimaea punctifera) noted to commercial planting of anthurium flowers cultured under tree fern (Cibotium chamissoi); as many as 80 (average 60) percent of flowers damaged by oviposition or feeding; commercial plantings under saran averaged 5 percent damage at Pahoa, Hawaii. Oviposition noted on leaves of this host plant and citrus leaves in adjoining fields. Leaves, flowers, and young fruits of citrus plants heavily damaged by feeding. (Shigenaga).

Forest and Shade Trees - All stages of an EURASIAN PINE APHID (Pineus pini) heavy on one Pinus sp. bonsai at Makawao, Maui. At Olinda, Kahului, and Wailuku, chemical treatment during past month unsatisfactory. At Monoa, Oahu, infested Pinus spp. noted at about 10 percent of all homes surveyed. Infested plants treated. (Miyahira, Kashiwai). Hundreds of larvae of a MONKEYPOD KIAWE CATERPILLAR (Melipotis indomita) infested single large kiawe (Prosopis pallida) tree at Mt. Tantalus, Oahu; numerous larvae noted under ground cover planting of Wedelia trilobata. On Oahu, light trap catches indicate steady decline of adults as follows: May, 446; June, 208; July, 125. Expect increase in trap collections during next few months; 1970 records show a peak in September. (Rose). A PIT SCALE (Asterolecanium pustulans) moderate to heavy on 2 of 7 Erythrina trees at Waialae, Oahu; as many as 136 scales per 3 inch, pencil-sized branches. About 11 percent of scales parasitized by Metaphycus portoricensis (an encyrtid wasp). (Kawamura).

Weather of the week continued from page 628.

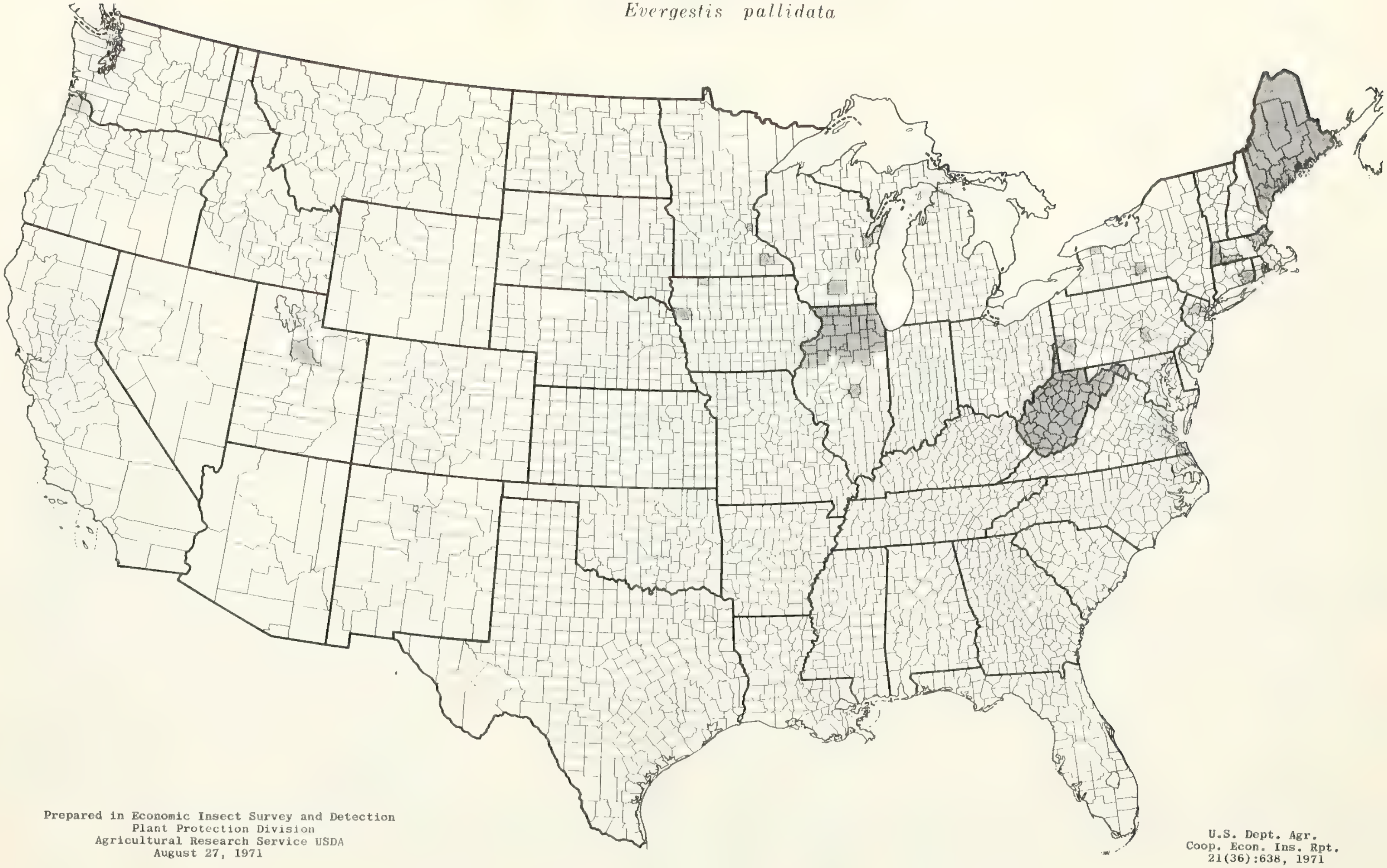
TEMPERATURE: The weekly mean temperatures averaged slightly above normal west of the Rocky Mountains over the western edge of northern and central Great Plains and along the eastern portion of the gulf coast. The high-pressure areas, one over the Pacific Northwest and the other over the Great Lakes spread fair skies and early autumn temperatures from the Pacific coast to New England. Some northern localities were 15-20° cooler Monday morning than 24 hours earlier. The temperature at Marquette, Michigan, was 46° Monday and 64° Sunday. Cool weather did not reach South Dakota until a day later. Numerous stations in South Dakota registered 100° or higher Monday. Pierre recorded 106° Monday. Maximums in South Dakota Tuesday were generally in the 80's and 84° at Pierre. Freezing weather occurred in the high Rockies and at some northern locations. Big Piney, Wyoming, registered 26°, Yellowstone, Montana, 32°, and Pellston, Michigan, 32° Tuesday morning. A warming trend occurred over much of the Nation late in the week. Miles City, Montana, registered 100° and Minot, North Dakota, 101° Saturday afternoon. Maximums over the Northeast held mostly in 60's and low and middle 70's Friday, due to cloudiness and rain associated with Tropical Storm Doria. The Northeast warmed to near or above 80° by Sunday. The maximum exceeded 100° every day in the southwestern deserts, reaching 107° at Imperial, California, Wednesday and Thermal and Blythe Sunday.

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation (inches)	Type of trap BL = blacklight I = incandescent MV = mercury vapor O = other	Agrotis ipsilon (black cutworm)	Estigmene acrea (saltmarsh caterpillar)	Euxoa auxiliaris (army cutworm)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	H. zea (bollworm, corn earworm, tomato fruitworm)	Laspeyresia pomonella (codling moth)	Loxostege commixtalis (alfalfa webworm)	Loxostege rantalis (garden webworm)	Loxostege sticticalis (beet webworm)	Manduca quinquemaculata (tomato hornworm)	Manduca sexta (tobacco hornworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Spodoptera frugiperda (fall armyworm)	Spodoptera ornithogalli (yellowstriped armyworm)	Trichoplusia ni (cabbage looper)	Crops
FLORIDA																								
Gainesville 8/20-26			BL					2	3	25						12					2	8		
MISSISSIPPI																								
Stoneville 8/20-26	69-94	0.12	2BL	44				18	10	6971					1	4			41		38	432	514	
NEBRASKA																								
Aurora 8/12-19			BL	21			99			56						1	4459	34	27		21	189		
North Platte 8/11-18			BL	15			23								1	2	164		39					
NEW JERSEY																								
Plainsboro 8/18-24			BL	103						26					16		116	46	324		43	132	60	
Seabrook 8/18-24			BL	26						29					20		28	6	190		9	32	114	
NORTH DAKOTA																								
Bismarck 10/19, 20, 24			BL									1		20										
Sentinel Butte 8/12			BL									2		1										
OHIO																								
Wooster 8/20-26			BL	54			76			1					1		229	8	18			4	3	
TENNESSEE (County)																								
Dyer 8/23-27			BL	6	3				2	115					1	1	202		4			10	3	
Franklin 8/23-27			BL	30	2				11	130					9	12	81		111			38	1	
TEXAS																								
Waco 8/19-26			BL	10														21	41	153	124	242	3531	
VIRGINIA																								
Holland 8/18-23			BL	2						1301					15		241		38			15		
Warsaw 8/18-25			BL	1						175					1	12	13		7			1		
WISCONSIN																								
Cedar Grove 8/17-23			BL	3						6							735	16	34		20			
De Forest 8/17-23			BL														331	6	8					

Distribution of Purplebacked Cabbageworm

Evergestis pallidata



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Some additional information is available in internal, unpublished reports of the Plant Protection Division.

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